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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,729	03/28/2006	Bernhard Gleich	PHUS030392US	2263
38107 7590 02/24/2009 PHILIPS INTELLECTUAL PROPERTY & STANDARDS 595 MINER ROAD CLEVELAND, OH 44143				
EXAMINER VARGAS, DIXOMARA				
ART UNIT 2831		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,729

Applicant(s)

GLEICH ET AL.

Examiner

DIXOMARA VARGAS

Art Unit

2831

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-8, 11 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 5, 9, 10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Election/Restrictions

1. Due to the amendment as filed 10/22/08, claim 14, now dependent from claim 1, is considered to belong to the claimed invention as elected. Therefore the claim has been rejoined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Keilman et al. (US 6,231,516 B1).

With respect to claims 1 and 4, Keilman discloses a transmission cable, for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): at least three cable segments (RF coil #223 A having two ends and a center wherein the two ends and a center of said coil are considered to be segments of the RF coil loop); and a plurality of electroacoustic couplers for providing electrical connection between segments (ultrasonic and electrical transducer sensor circuit #220 coupling each RF end segments of RF coil #223 A indirectly through the cables #225 and #226).

4. With respect to claim 11, Keilman discloses a transmission cable for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): a plurality of cable

segments (RF coil #223 composed of multiple wires #223A wherein said multiple wires have two ends and a middle which constitutes the cable segments); and a plurality of couplers each of which transforms a first signal carried by a first cable segment into an acoustic signal and from the acoustic signal into a second signal carried by a second cable segment (ultrasonic and electrical transducer sensor #220 acting as the coupling system of the RF coil #223 composed of multiple wires connected to it).

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 2, 3, 7, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keilman et al. (US 6,231,516 B1) in view of Fox et al. (US 5,248,943 A).

With respect to claims 2, 3, 7, 8 and 13, Keilman discloses a transmission cable for use in a MR apparatus comprising: a plurality of cable segments (RF coil #223 A having two ends and a center wherein the two ends and a center of said coil are considered to be segments of the RF coil loop) and electro acoustic couplers (ultrasonic and electrical transducer sensor circuit #220 coupling each RF end segments of RF coil #223 A indirectly through the cables #225 and #226).

In addition, Keilman discloses the claimed invention as stated above except for the first and second mixers disposed at a first and second end respectively of the cable for shifting a signal frequency. However, Fox discloses said first and second mixers disposed at a first and second end respectively of the cable for shifting a signal frequency (Figure 1, mixers #102-108 each connected to a different channel connected to the segments). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first and second mixers disposed at a first and second end respectively of the cable for shifting a signal frequency as taught by Fox with Keilman's transmission cables for the purpose of obtaining a low noise MR signal from a multi-coil sensing system which allows high resolution images to be produced as stated by Fox (Column 2, lines 11-16).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vitek et al. (US 6735461 B2) in view of Keilman et al. (US 6,231,516 B1).

With respect to claim 6, Vitek discloses an MR apparatus comprising (as shown in Figure 1): a first magnet system for generating a main magnetic field in an examination region (#52); and an RF coil disposed in the examination region for transmitting and/or receiving RF signals to and/or from the examination region (Column 6, lines 7-26).

Also, Vitek discloses the claimed invention as stated above except for specifying the type of RF coil or the configuration for said RF coil including a plurality of transmission cables for carrying signals with the system, at least one of the transmission cables comprising a plurality of cable segments and a plurality of electroacoustic couplers for coupling adjacent cable segments. However, Keilman discloses an RF coil system capable of being used in a magnetic system with a static field wherein said RF coil has a plurality of transmission cables for carrying signals

(Column 28, lines 6-18, wherein it is disclosed that the RF coil #223 is composed of wires #223A as shown in Figure 19D and said wires are considered to be the claimed plurality of transmission cables), at least one of the transmission cables comprising a plurality of cable segments (RF coil having multiple wires #223A wherein said multiple wires have two ends each which constitutes segments of the cable) and a plurality of electroacoustic couplers for coupling adjacent cable segments (ultrasonic and electrical transducer sensor #220 coupling the wire ends through the cables #225, see Figures 19A-19D). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a configuration for said RF coil including a plurality of transmission cables for carrying signals with the system, at least one of the transmission cables comprising a plurality of cable segments and a plurality of electroacoustic couplers for coupling adjacent cable segments as taught by Keilman with Vitek's MR apparatus since it would have been obvious to one of ordinary skill in the art at the time the invention was made for the purpose of diagnosing and providing treatment to a patient.

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Keilman et al. (US 6,231,516 B1).

Keilman discloses the claimed invention as stated above except for the apparatus comprising a catheter, a preamplifier, and a transmission cable disposed between the catheter and the preamplifier. However, the examiner takes official notice since it is known in the art to have MR systems including catheter, preamplifiers and transmission cables in different configurations.

Allowable Subject Matter

9. Claims 5, 9-10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:
 - a. With respect to claim 5, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a transmission cable for use in a MRI apparatus, the transmission cable comprising a transducer structure wherein each electroacoustic coupler comprises: a substrate; a first set of conductive fingers disposed on the substrate; and a second set of conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the second set of conductive fingers in combination with the remaining limitations of the claim 1 above.
 - b. With respect to claim 9, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising each cable segment comprising a first conductor and a second conductor and each of the first and second conductors is connected to at least one electroacoustic coupler in combination with the remaining limitations of the claim 6 above.
 - c. With respect to claim 10, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest an MRI apparatus comprising a transducer structure wherein each electroacoustic coupler comprises: a substrate; a first set of conductive fingers disposed on the substrate; and a second set of

conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the second set of conductive fingers in combination with the remaining limitations of the claim 6 above.

d. With respect to claim 12, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a transmission cable for use in a MRI apparatus, the transmission cable comprising each coupler having a high impedance for a common mode wave on the cable in combination with the remaining limitations of the claim 11 above.

Response to Arguments

11. Applicant's arguments filed 10/22/08 have been fully considered but they are not persuasive.

12. Applicant argues that Keilman is directed towards an instrument stent which communicates wirelessly. Therefore, Keilman it is not analogous art.

13. In response to applicant's arguments, regarding claims 1 and 6, the recitation "a transmission cable for use in a MRI apparatus" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Also, the fact that the claim language calls for "cable segment" does not mean that said meaning is

restricted to connecting cables since it is known in the art that RF cable segments that operates as RF antennas are also a broad reasonable interpretation according to the known transmission cables or transmission lines known in the art that operates as antenna segments. If applicant meant the cable segments as means for connecting any electrical element within the MR system to the MR processor, the applicant is reminded that the claim language does not uniquely suggest said intended use.

14. Applicant argues that claim 11 calls for a transmission cable as opposed to Keilman that is not broken into a plurality of segments coupled by couplers.

15. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., transmission cable broken into a plurality of segments coupled by couplers in such a way that the configuration is of adjacent segments with couplers coupling between each segment) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

16. Applicant's arguments with respect to claims 2-4, 7-8 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIXOMARA VARGAS whose telephone number is (571)272-

2252. The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brij B Shrivastav/
Primary Examiner, Art Unit 2831

/Dixomara Vargas/

Examiner,

Art Unit 2831